Documentation of Indigenous Pottery Tradition of the Nagas

Sponsored under TRI

Department of Art & Culture

Government of Nagaland

Dr. Ditamulü Vasa

(2019-2020)

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Table of contents

Acknowledgements

Chapter -1 : Introduction

- Study Area
- Objectives
- Method of study

Chapter – 2 : Indigenous Pottery Manufacturing technique

(i) Mining of raw materials

(ii) Clay preparation and tempering

(iii) Pottery implements

(iv) Manufacturing techniques

(v) Decorations

(vi) Forms

(vii) Drying and firing

Chapter – 3: Discussion and Conclusion

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Chapter 1

Introduction

The study of Naga culture has always had a central concern and a pivotal position such that it had gone beyond strictly anthropological concern. Academic interests in indigenous or local knowledge have grown in recent years owing to the region's rich cultural heritage and oral traditions that offers tremendous scope in anthropological and archaeological research. The state of Nagaland consists of sixteen officially recognised major ethnic groups possessing inherent cultural innovations that are linguistically and culturally distinguishable from one another on the basis of various cultural and symbolic markers. The Naga communities is characterized as having rich folk arts both performing and non-performing art forms, folk literature; traditional knowledge systems pertaining to management and utilization of natural resources. The richness of such traditional knowledge and skills reflects the rich cultural heritage of the land. Indeed, as shown by Kayanka (2016) pottery, the making of earthenware or baked vessels, is a well-known global practice and the most widespread practice of the indigenous people around the world. Not only has clay been shaped by human hands for thousands of years but the objects created by those hands have shaped the daily lives of the people who used them (Yussif, 2018). One also needs to understand that it is not only a material which depicts the creativity and aesthetic sense of the people but it also illuminates the social and economic relationships of the past. Despite the fact that the theoretical and methodological pitfalls of direct analogical reasoning have been under continuous scrutiny over the last decades, the study of modern material culture can yield useful information on various aspects of past human activity (Kalentzidou 2000: 165). Ceramics possess a great deal of information for understanding the past due to its durability. Pottery manufacture is known to have developed around the onset of agricultural practices and increased sedentary behaviour (Sarjeant 2008:20). Although the present study does not provide any scientific dates from archaeological excavations conducted in the adjoining region, it is logical to presume that the art of making pottery is as old as settlement in the region from information gathered through oral sources.

Pottery is also one such material which is ubiquitous in archaeological sites and to reconstruct the past, archaeologists deal with pottery remains besides the various data

findings. To reconstruct the past pottery behaviour of a people, archaeologists make use of ethnological apparatus among other approaches (Nomishan 2018) deriving from ethnographic material. Such an approach known as ethnoarchaeology 'embodies a range of approaches both in the living context and to understand archaeological records in order to form archaeological concepts and to improve interpretation' (David and Kramer 2001). Ethnographic studies on the age old inherent traditional pot making techniques that still exists in few Naga villages today (see Vasa 2011, 2014, 2017, 2018) has the advantage and potential of interpreting the pottery remains from excavation sites (Jamir& Vasa 2008, Jamir et al 2014, Ngullie 2014, Walling 2020) that would then serve as evidence of cultural contacts between various groups besides supporting various theories linking Northeast India to Southeast Asian counterpart in terms of cultural diffusion and affinities shared since ancient times. Very often people tend to oversimplify the potters craft due to its insignificance and raw nature and perhaps that is the reason why we lack information about this indigenous tradition in literary form. There is very little information to the study of indigenous knowledge pertaining to pottery crafts and the way in which potters perceive and engage their material world in the process of pottery production. It is also important to consider that the significance of pottery in society has not been explored through ethno-historical approach.

Why should the traditional pottery in Nagaland be documented? This is because of the need to change the concept of traditional pottery activities as simply a way of cultural tradition and also to complement the potters' philosophies Few research documentations on the pottery traditions and its usage on socio-economic concept has been done in other districts of the state and the present documentation in Phom area is also an attempt to record the age old tradition with an effort to make systematic comparisons of step wise manufacturing technique, prohibitions and rituals connected to pottery. Thus, it has become very important to study and consider the significance of pottery in society through ethno-historical approach. Researches like Bowser (2000) has come to an understanding that material culture is actively used to mark, establish and maintain boundaries. Further Neupert (2000) also noted that social and political differences sometimes result in material differences. The dynamic nature of developments in researches concerning material culture thus provides an understanding of the variable relationships between material culture and cultural boundaries. With technological advancement of human civilization, it has become necessary for the present generation to preserve the fast-diminishing traditional art of pottery making. The fast-

changing scenario to modernity and pro-western culture has consequently resulted to the functioning of tribal economy with the society now directly affected by money economy and under this situation their indigenous economy is taking a new shape. Also, recent decades have witnessed that the traditional pottery crafts are gradually petering out under new economic conditions and giving way to the metallic ones. As such much of the knowledge about this art is fast disappearing from the memory of the people and there is a decline of artisans as well. An important goal of ceramic and pottery studies has been according to Kramer (1985:97) 'to study the rapidly disappearing traditional potters who still practice their craft in a few areas of the world. Such work is extremely important, and is still possible in some areas, as such though the loss of traditional crafts may be a cause of despair, but it does not signal end to understand the anthropology of traditional pottery.

The urgency of the need to carry out this study is also enhanced by the fact that such traditional knowledge and the complex method of processing the raw materials for use in the manufacture of pottery have not been documented in its entirety in a systematic manner. The communities themselves also need to be made aware of the need to consciously protect and preserve their legacy.

Geographical background:

Pongo village is situated in Sakshi tehsil, Longleng district, Nagaland. It is located 10 kms west from the district headquarter, Longleng. The village is situated in the border of Longleng and Mon districts respectively. Under Mon district the closest area bordering Pongo village on the east is Chen village. Pongo village is considered as a tourist village under Longleng and it is well known since time immemorial as it produces the best 'Taro' among the Phom inhabited area. The village has a population of 2586 according to 2011 census. The village comprises mostly of cultivators where rice is grown as the main staple crop besides various other agricultural products. Amongst the many crops taro is cultivated mainly for commercial purpose.

Yongphang is another Phom village that also falls under Sakshi tehsil that is located to the south of Pongo and 15 km away from Longleng. The total population according to 2011 census is 853. the people of Yongphang are also primarily agriculturists where their livelihood depends mostly on agricultural products. They practice jhum cultivation with various agricultural produce besides rice which is the main crop grown.

Study Area:

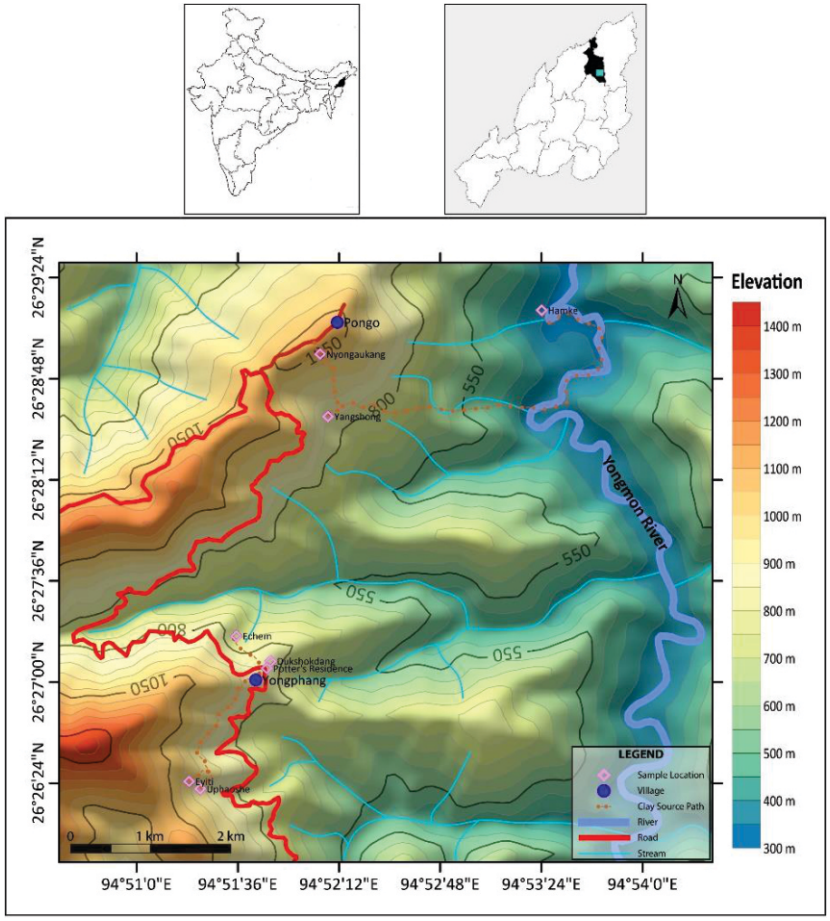

Fig 1: Map showing location of Longleng and topography showing study areas.

Ethnographic background:

Pongo and Yongphang villages fall under Longleng District. The age-old pottery tradition practiced by the people of the Phom region have not been studied or documented till date. Hence, an ethno-historical approach in documenting the pottery traditions and its usage on socio-economic concept in this region has become very important to consider the significance of pottery in the society. Such a study will go a long way in promoting the dying traditional pottery production techniques. Also, the method and technology that the potters adopt has the advantage and potential of supporting various theories linking Northeast India to Southeast Asian counterpart in terms of cultural diffusion and affinities shared since ancient times. It has been observed that in both the villages under study, the pottery production is solely the responsibility of women. Women in these villages produce indigenous pottery wares, mostly domestic wares and also trade on them despite the fragile nature and cumber stone

transportation of such wares. The present study focusses in the involvement of Phom womenfolk in traditional pottery practice and also brings to limelight the various social norms, customs, beliefs and taboos regarding pottery besides pottery as an outstanding economic venture.

Objectives:

The present study was carried out with the following primary objectives:

- To record and preserve the existing knowledge of this endangered art with a view to determine the relative nature of the pottery industries that developed during the past which have been continuing till date.
- The study aimed to go beyond not only mere documentation of the art but also to look at the art and the practices within the socio-economic realm of the people so as to analyse and provide a cultural insight into the life ways of the people. Such information was recorded and analysed to formulate the art form and its utilitarian functions within the larger cultural frame of the community.
- The present study incorporated scientific approach in exploring the ways in which archaeological pottery assemblages of the region can be studied and interpreted.
- The achievement of the above objectives intends to go a long way to make available baseline materials for upcoming generations as well as ready reference for future in-depth studies and researchers into the subject matter.

Methodology:

- Observation and data collection were carried out directly in the field that involved conducting interviews with 12 potters from Pongo village and 11 potters from Yongphang village respectively.
- Structured and semi structured questions were prioritized to assess the responses from the population towards the local pottery products maintaining cognizance on the information the research required. In-depth interviews and collection of oral history were conducted with people who still have knowledge about the history of pot making. Such information was recorded and analysed to understand the art form and its utilitarian functions within the larger cultural frame of the community.
- Quantitative data on the various types of pottery vessels were made.

- In addition to the structured questions, interviews were also conducted with individuals in a moderate setting that created an opportunity for the investigator to understand the participant's view described in her own words.
- Application of analytical techniques for understanding chemical and mineral composition and properties of the clay to derive the structure and texture of Naga pottery.

The potters

The data collection was conducted in the month of January 2021. During the field work data collection, a series of enquiries were made on pottery technology and observations were made of 11 potters each in Pongo village and Yongphang village.

TABLE 1: Information on the Phom potters of Pongo and Yongphang villages whose work was studied.

Name	*Village*	*Age*	*Place of birth*	*Learning age*	*Teacher*	*Occupation*	*Religion*
Chemshen	Pongo	60's	Jakphang (Mon)	20's	Mother-in-law	Farmer	Christian
Pheilong	-do-	57	Pongo	25	Cousin	-do-	-do-
Nyeilang	-do-	60's	-do-	30's	Cousin	-do-	-do-
Maula	-do-	80's	-do-	15	Mother	-do-	-do-
Chaüla	-do-	50's	-do-	40's	Sister	-do-	-do-
Chahang	-do-	40's	-do-	20's	Mother	-do-	-do-
Nyemngoi	-do-	50's	-do-	30's	Mother	-do-	-do-
Wanphung	-do-	50's	-do-	47	Cousin	-do-	-do-
Leinyü	-do-	40's	-do-	15	Mother	-do-	-do-
Y. Ali	-do-	48	-do-	40	Cousin	-do-	-do-
Elu	-do-	50's	-do-	43	Neighbour	-do-	-do-
Shamei	Yongphang	55	Yongphang	42	Through observation	-do-	-do-
Yungmei	-do-	50's	-do-	20's	Mother	-do-	-do-
Alem	-do-	33	-do-	30	Neighbour	-do-	-do-
Angoi	-do-	50	-do-	43	Mother	-do-	-do-
L. Bango	-do-	54	Yangching	53	Relative	-do-	-do-
L. Ating	-do-	39	Shakshi	36	Neighbour	-do-	-do-
Omei	-do-	39	Yongphang	36	Relative	-do-	-do-
Chingphei	-do-	50	-do-	28	Sister	-do-	-do-
Ape	-do-	60	-do-	20's	Sister	-do-	-do-

Chahang	-do-	35	Auching	32	Through observation	-do-	-do-
Amang	-do-	60's	Yongphang	60's	Through observation	-do-	-do-

The main activities during this field trip were gathering of information in connection with pottery making, interaction with potters and systematic documentation of pot making process. Data collection could be done only during the winter months as pot making is seasonal activity that can only be practiced during the dry seasons. The technical explanation one can derive is that during the monsoon season, the incessant rain makes it difficult to access the clay mining area besides drying the raw materials for use as well as firing the finished vessels. During the interviews with the potters, the potters also expressed the unseasoned monsoon for pot making as they are more engaged in agricultural activities. Although pottery production is a female activity, the men help in making the tools as and when needed. From the statistics above it was observed that the transfer of knowledge of pottery tradition was not restricted to particular clans or family or status, rather it was open to all age groups with the condition to find someone who is willing to teach and show the skill right from the beginning. In only few cases did the learning process take place by witnessing and observing the potters at work. Nevertheless, the teaching learning process takes place during the peak season of pottery making under the supervision of those who have already mastered the method. Interviews were also conducted with the village elders and Village council members comprising of the following members:

Pongo Village

1. Shri Metting Phom (former chairman)
2. Shri Thiateyi Phom (Head GB)

Yongphang Village

1. Shri P. Ashing Phom
2. Shri K. Anyak Phom
3. Shri K. Bongkom Phom
4. Shri Chaüba Phom

Chapter 2

Indigenous Pottery Manufacturing Techniques

Ethnography of pottery making in Pongo village and Yongphang village, Longleng:

Any discussion of pottery production begins with the establishment of the materials employed in the process till the end products i.e., prospecting of clay and its preparation which is further followed by forming, surface treatment and firing. Generally speaking, in the context of Naga indigenous potters identified and studied so far, they have no knowledge on the chemical composition of clay in the same way archaeologists analyse them in ceramic fabrics. However, a general observation made amongst the potters shows that potters selected clay for its physical properties such as colour, plasticity, the amount of non-plastics, the presence or absence of gold-like particles, drying characteristics or salty taste (Arnold et al. 1991 as cited by Sarjeant 2008: 22). Overall, it is observed that there exists three aspects of pottery production and its economic use viz production, distribution and use or consumption. Potters from both villages are all women who mine and collect clay in groups and work together in a common place or in their own homes. In pottery making, the production sequence (or *chaîne opératoire*) is carried out in seven general stages, namely, (1) raw material procurement, (2) clay processing, (3) shaping, (4) decoration, (5) drying, (6) firing, and (7) post-firing treatments, such as surface treatments (Rye 1981; Gosselain 2002; Fowler 2011). Not all stages are necessary. In this section, the pottery *chaînes opératoires* practised in Pongo and Yongphang villages are presented along with a consideration of the rationale for the choices made during the production process. A step wise procedure beginning from clay mining till firing of vessels is discussed here.

(i) Mining of clay:

During the course of study, it has been observed and documented that potters from both Pongo and Yongphang villages use agricultural tools such as machete (Dao) and long iron scrapper (fig 4a in the case of Pongo and machete and spade in the case of Yongphang to extract clay from the source. Since the method and process of extracting clay was similar for both the villages the discussion follows thereupon connotes a general process of extracting the raw material-clay. The potters mined in groups or in household level during the winter

months when they are free from agricultural activities. The local name for clay is haam/haum. The actual extraction of clay always begins with clearing around the mining area, initially water is bailed out of the hole and leaves and other organic litter on top of the clay layer are removed. Next, lumps of wet clay are dug out with the digging tools, cleaned of dirt and stones and particles that are considered impurities (as the potters say this is necessary to prevent pots from cracking when fired). The soft clay is then kneaded to sizeable blocks of clay lumps on a stone slab that is placed close to the mining hole. Several blocks like this are made and each block is wrapped with palm leaves found close by. Each block of clay roughly weighs 8 -10 kilos that are packed in bamboo or cane woven baskets which has a strap, carried back to the village. They leave some blocks of clay at the mining area in some occasions, if the load becomes heavy, to be transported at a later date.

Pongo village

Fig 2: Physiographic map showing Pongo village and the clay sources

In Pongo village clay is collected from two sources known as *hamkhe* and *yangshong* which is roughly about 6 km and 1.5 km from the village respectively. The clay from *hamkhe* is considered to be of better quality having greater plasticity in comparison to that of y*angshong*. According to oral tradition the potters are restricted to meet any guests or outsiders the day before they set out to collect clay. They are also to remain clean and chaste till the pots are fired and ready for use. *Hamkhe* is located downhill the village, and to reach the clay source one has to cross 3 streams locally known as *Chungnyu* river or *Yungnyu* (fig 3) for the general Phom community, which can be quite deep with rough current during

monsoon season. The potters informed that *hamkhe* is possessed by spirits, the location also speaks for itself being in a swampy area not far from the third stream. It is said that the area has been the main clay source since time immemorial but continues to remain in the same level as has been left the previous year after mining. They narrated that in their local oral tradition *hamkhe* is compared to the life of locust, in other words it has been interpreted that

Fig 3: The Yungnyu river or Yongmon river (locally known as Chungnyu river by Pongo village) a tributary of Dikhu river.

the soil keeps growing from inside which is why it remains at the same level till date. Pongo potters use tools made of iron with wooden handles such as machete and long scrappers (fig 4a). The tools are of everyday use for agriculture as well as household purposes. During the present field work two women potters demonstrated the clay mining process. On reaching the mining area (fig 4b), clearing around the spot of bushes and branches of trees over hanging was done. Meanwhile one of them collected plantain leaves/ wild banana leaves found closeby. After clearing the top layer of the clay mining area, one lady got engaged in digging (fig 4c) while the other got busy sorting the dug out clay of impurities such as stone pebbles, dried organic matters etc (fig 4d). Digging seemed not difficult as the soil was all damp and once the lady started digging, she collected the dug out clay with bare hands and spread them on the plantain leaves. The other lady simultaneously working on the pure clay upon a flat stone (fig 4 e,f) (this stone is kept there for this purpose) forming blocks of clay by striking the thick lump of clay on it (fig 4 g,h). The stone slabs are found to be sandstones, smooth on the surface and locally available, roughly round and having a dimesion of 10 cm x5.5cm in

case of the oval stone with a thickness of 2.5cm. in case of the roughly circular slab, the average circumference was 30 cm with a thickness of 3.5 cm respectively.

Fig 4 : Clay mining at Hamkhe, Pongo village: (a) Digging tools; (b) Mining area hamkhe; (c) Digging out clay ;(d) Sorting out impurities; (e) stone slab in mining area; (f) stone slab in the mining area; (g) Digging and collecting clay; (h) Making blocks of clay; (i) Clay blocks free from impurities; (j) packing in plastic bags/sacks

This process went on till the potters collected sufficient amount of clay to be carried back to the village (fig 4i). They narrated that if the clay extract is beyond what they can be carried, they store them at the spot itself neatly wrapped with plantain leaves so that the clay don't lose its moisture. Having collected desirable amount of raw materials it is then covered with plastic sheets and then packed in plastic bags (fig 4j). In the past this was normally transported using traditional woven carrying baskets. The other clay source *yangshong* is located nearer to the village below a jeepable road. Here too, the same method of clearing the area is performed, but before any activity began one of the potter offered prayers casting away bad spirits (clay mining area is considered dirty, impure) and any bad luck that might befall during clay processing. The pit was filled with water on top that had to be bailed out first (fig 4a), area surrounded by bamboo groove with wild growth of various plants and ferns, plantain leaves, variety of Trachycarpus sp. Unlike *hamkhe*, clay from *yangshong* was

a bit dry and compact. Clay is extracted and collected over plantain leaves, during this time any impurities are sorted and discarded (fig 5b). They are then transferred and packed in a variety of palm leaf, Trachycarpus sp. (fig 5c) tied with bamboo split and then transported to the village (fig 5d). Since the procurement operation of clay is exhausting, having travelled by foot in rough terrains, it is observed and also narrated that no potter would ever start the manufacturing process on the same day.

Fig 5: Clay mining at Yanshong: (a) Mining area, Yanshong; (b) clay collection in progress; (c) clay collection in progress; (d) Packed with palm leaf of Trachycarpus sp.

Yongphang village

Fig 6: Physiographic map showing Yongphang village and the clay sources

In Yongphang village clay is collected from two sources known as Khinyu and Echem located in two different areas in opposite directions which is roughly about 3km and 1 km from the village respectively. From Khinyu two types of clay are extracted known as *uphaoshe* and *shiejang pangtak* (red soil as is locally known). Located not far from jeepable road, the path leading to the mining area is accessible by foot on the dry streamlet, which is not possible during monsoon season. The dried up stream has access to boulders of sandstone and various species of different plants (fig 7a). *Uphaoshe* is considered as the main clay having more plasticity than *sheijang pangtak*. The other location known as Echem is located below the settlement area that is also considered to be equally good as *uphaoshe*. They use simple digging tools comprising of spade and machete and a woven carrying basket for transportation (Fig 7b). According to the potters, they said all the three types of clay ie. *uphaoshe, sheijang pangtak* and *echem* can be mixed together along with broken potsherds but can also do without *echem* being added. They said most of the time they use *uphaoshe* since during the time of extraction they can gather *sheijang pangtak* as well, the latter being the primary ingredient to be mixed with the main clay. *Echem* on the other hand is located in an area closer to the village but has a steep terrain (fig 7c) and the labour is found to be exhausting, climbing uphill with such heavy load of wet clay. *Echem* as stated is considered to possess the same plasticity as *uphaoshe* (fig 7d-e). Potters here in Yongphang employ spade and machete to extract clay and a traditional woven carrying basket for transportation.

Here too, the initial procedure as they reach the clay mining area is clearing the area of weeds, dried leaves and any other impurities. They use both machete and spade to extract clay, use the same procedure as Pongo potters to make clay blocks (fig 7f).

Fig 7: Clay mining at Yongphang village: (a) way to clay mining area, Khinyu; (b) potters with simple digging tools- spade and machete; (c) : downhill towards Echem; (d) clay extraction area, Echem; (e) uphaoshe clay extraction area, Khinyu; (f) Making clay blocks, Echem

The stone slabs used for hardening fresh clay into blocks are of sand stones (fig 8 a,b) locally available around the vicinity. The clay blocks are found to be much bigger in comparison to Pongo, each block packed separately in a leaf of a tree belonging to Trevesia sp. of araliaceae family. The blocks are then loaded in a locally made traditional carrying basket and are transported to the village. Above the plot where *uphaoshe* is extracted, there is another clay source, locally called as *sheijang pangtak* (red clay), that is used as a tempering material. As stated earlier the other clay source in Echem is located in a steep slope and upon reaching the spot, it was found that the spot was covered with fallen leaves, stones, dried twigs and a lot of mud that probably was washed down from uphill. As required, upon reaching the spot the potters started clearing off the area, of dried matters, leaves and stone pebbles (fig 8c), followed by digging the top soil which comprised of mud, digging continued till clay was reached. Not only digging tools but even bare hands were used to examine the quality of clay (fig 8d). They claimed that the deeper the pit, the better the quality of clay, but also commented that all types of clay from where they get the raw materials are fine, such that it doesn't require much digging expecting better clay. It has been observed that the women have a good co-ordination in determining the amount of clay that can be transported at one go, and the remaining clay made free from impurities are left there at the spot, that can be brought back at a later date whenever they can. The clay blocks which are much bigger in size than as was observed in Pongo are neatly and separately wrapped with a leaf from a plant from Trevesia sp. of Arialeceae (fig 8e, f) chopped that is plentily available in the vicinity and loaded in the carrying basket. The carrying basket roughly measures to 30cm in height and 20 cm diameter at the base. The basket is packed according the weight a person can carry after this back breaking task (fig 8g, h). Although the weight is heavy and exhausting, the potters never lose to show a cheerful face having accomplished what she desires the most (fig 8i, j). After reaching the village fresh clay is left at the back of the house called *machang* (a sitting area of bamboo platform raised on stilts commonly found in all the houses) or also in front of the house upon a wooden pounding platform. This is normally done for the clay to dry up (fig 8k,l).

a

b

c

d

e

f

g

h

Fig 8 Clay processing in Yongphang: (a) stone slab at the mining area, Khinyu; (b) stone slab at the mining area, Khinyu; (c) clearing the top soil using spade, Khinyu; (d) extracting clay with bare hands, Khinyu; (e) clay blocks at Echem; (f) clay blocks at Khinyu; (g) loading clay in carrying basket; (h) banana leaves to prevent soiling on the carrier; (i) from Khinyu, Yongphang; (j) from Echem, Yongphang; (k) fresh clay left to dry at the back of the house; (l) fresh clay laid upon a pounding platform for drying

It has been recorded that clay that is mined the current year is left to dry for several days or weeks depending on the weather and the amount of sunlight. Normally clay from the previous year is most preferable as it has dried completely and is free from any moisture. With proper sunlight, clay extraction made at the end of autumn before harvesting is also useable the same year. Nonetheless, the potters prefer to use the ones they have collected the previous year.

Beliefs and taboos about clay mining

Clay extraction is subjected to beliefs and taboos which are part and parcel of indigenous communities that are reinforced and considered as taboo. According to Freud (2017, cited by Oney 2020), taboo has two opposite meanings: one is sacred, sanctified the other is terrible, dangerous, prohibition, impure. Taboos encountered in pot making in Pongo and Yongphang involves sacred and sanctity, to respect the taboos they were taught during the learning process. This was emphasised by saying that clay mining area is dirty and if one is not careful in adhering to the taboos it may affect during the manufacturing process. A series of taboos were directly linked to the process of extraction: (1) a pregnant or a menstruating woman is restricted from extracting clay otherwise the baby will have birth marks all over the body (since clay makes the hands dirty during extraction, the same will result to the unborn baby). For a woman who is chumming, the clay she extracts during that time will develop cracks or explode when fired. (2) sexual intercourse is prohibited on the eve of clay extraction otherwise the pots will crack when fired.

Another oral tradition was encountered in Yongphang village regarding abandonment of clay mining area at a location called etiyi that is situated to the northwest of uphaoshe (present clay mining area). It was stated that a woman potter died while mining clay in etiyi and because of that incident it was thereafter considered that area to be dirty, and they stopped mining and collecting clay from etiyi.

The potters resort to the above taboos in order to ensure the success of the production process and to have a good yield.

(ii) Clay preparation and tempering:

TABLE 2: Mixture of raw materials and average size of vessel in terms of cooking capacity

Village	**Name of raw material**	**Amount in gms (quantity)**	**Vessel capacity**
Pongo	hamkhe	600 gm	Can make a vessel that can cook upto 3-4 kgs of rice
	yangshong	400 gm	
	broken pot sherds	400 gm	
Yongphang	echem ham	300 gm	Can make a vessel that can cook 1 kg of rice
	sheichang pangtak	100 gm	
	uphaoshe ham	400 gm	
	broken pot sherds	100 gm	

Mining and obtaining clay can be a communal activity but potters prepare clay for their own vessels. Clay is left to dry for several days till it becomes completely dry, but it has been observed that potters mostly preferred clay that was extracted the previous year since. Clay being the major raw material for pottery, temper is another basic raw material potters consider to improve the quality of clay (Kayamba et al. 2016: 85). It has been informed that temper is added in order to increase workability of clay while shaping the vessels, also if temper is not added in a proper ratio pots develop cracking during the firing process. Temper allows for an even distribution of heat through the ceramic paste during firing (Blandino 2003: 25). Here in Pongo and Yongphang villages, the main clay (as they call it), *hamkhe* in case of Pongo and *uphaoshe/ echem-ham* for the Yongphang potters is mixed with clay having lesser plasticity and broken potsherds. From this observation one can consider the low quality clay and potsherds are used as grog, tempering materials (fig 9a). The two villages employ the same method of preparing clay. Clay as well as grog is pounded into fine powder on a stone slab with the help of a grinding stone (sandstone) (fig 9b). It was noticed that pounding of raw material using this method is observed in Pongo village, whereas Yongphang potters use wooden mortar and pestle (fig 9c,d) as well besides the grinding stone. After pounding, clay is then sieved using a mesh locally made of bamboo, the larger grains that remains as residue are then pounded again. The method is applied for pounding all the types of raw materials. Potters works in groups and help each other to reach and complete the various step by step stages. During this times, it also serves as an opportunity to learn this art. The learners usually helps in pounding the raw material,sieving (fig 9e), measure the ratio of clay and grog to be mixed and in kneading. In the process the ones who have already mastered the art/craft guides them in each process, as they begin working in shaping and forming the vessel. After the clay is pounded and sieved into desired and workability stage (fig 9f,g) it is then proceeded to the next stage that involves adding water and kneading after mixing them to a proportionate ratio. The various types of clay are mixed in the ratio of 1:1:1, adding water time to time till it water seems to have been evenly distributed. The potters normally assess by their feel with bare hands. All the different types are mixed together (fig 9h) and to that water is added and kneaded in small portions at a time.

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Fig 9 Clay preparation and tempering: (a) raw materails of Yongphang; (b) grinding of raw material in Pongo; (c) Mortar and Pestle, Yongphang; (d) Pounding the raw materials, Yongphang; (e) Sieving pounded clay, Yongphang; (f) Clay after sieving, Yongphang; (g) Pounded clay after sieving, Pongo; (h) mixing of raw

materials, Pongo; (i) making a paste of water& clay, Pongo; (j) making a paste of water &clay, Yongphang; (k) pounding clay paste, Pongo; (l) Pounding clay paste,Yongphang; (m) rolling clay into lumps, Pongo

The process usually requires the help of another potter who assists in pouring water or can also be done by the potter herself if she is working alone (fig 9i,j). After mixing all the raw material, clay is now ready for use and does not require any other treatment except for pounding so as to homogenise the clay for the forming and shaping process. The potter puts the clay portion one by one on a slab of stone locally called as *Yongsham*, which she previously used for grinding, and starts pounding vigorously using a wooden pestle (local name) sprinkling little water over it so that clay does not become too sticky (Fig 9k,l). Clearly it is observed that after the pounding, the clay looks and feels more homogenous. The potter too examines it with her bare hands, after which a portion of clay is scrapped to be rolled into lumps (fig 9m). In one dig a potter can make 7-8 lumps. This clay lumps are then worked on for forming and shaping vessels.

iii) Pottery implements:

A potter may have several of this stone along with wooden paddles for shaping the vessels. In both the villages, potters use a variety of different tools made from wood and bamboo for executing during different stages of pot making process. following are the descriptions of the various tools employed by both Pongo and Yongphang potters:

Pongo Village:

1. Yongsham: stone slab for grinding clay as well as for pounding
2. Oling: Paddel wrapped with cord
3. Dük-ap-ling: Paddle wrapped with cord
4. Appong- Plain Paddle
5. Hamshü mü: Pestle
6. Hamshü Yong : Anvil
7. Dük-ap-yong : Anvil
8. Shüling : a bamboo stick pointed at one end used during perforation of vessel
9. Onungling: Bamboo split for scrapping off excess clay

Yongphang village:

1. Longmet : Pestle for making cavity
2. Heapp: paddle wrapped with cord
3. Dükkahdhandha: plain paddle for smoothening
4. Owshidhandha : Scrapper used for removing excess clay

5. Dükleyong: anvil
6. Nütha: Sieve
7. Duk-kam: pots stands
8. Ahna : scrapper made of bamboo split, also used for incising

Fig 10: Pottery making tools & implements: (a) : Paddles and anvil, Pongo village (pic-Y. Changkiri); (b) Paddles and anvil,Yongphang village (pic-Y. Changkiri); (c) stone slab and wooden mortar for pounding clay, Pongo village; (d) bamboo split for scrapping excess clay, Pongo village.

Comparatively it has been observed that both Pongo and Yongphang villages use almost the same type of manufacturing tools for pottery making and there is not much difference in the manufacturing process as well.

iv) Manufacturing technique:

In preparation for the potting, the potter removes the homogenous mass of clay from the stone slab in small masses suitable for moulding desired size of vessel. The lump of clay is rolled into lumps, from one lot of pounded clay about 7-8 lumps can be formed, which is to say 7-8 vessels can be made. The clay lumps are covered with fresh green leaves or laid on a bamboo basket over which a plastic sheet is spread so that the clay mass moist. Both Pongo and Yongphang potters use paddle and anvil technique in shaping the vessels. At first the clay

mass is held by the hand over her lap and a cavity is made at the centre using a wooden pestle, *hamshü mü* as Pongo potters call it and *longmet* in Yongphang dialect. The wooden pestle is struck several times corresponding with the left hand that rotates the clay form, in this manner it gradually expands the body of the vessel. The walls become thinner and after reaching a desired depth and circumference of the use of the pestle is discontinued (fig 11 a,e). In Yongphang village the potters use the thumb to smoothen the inner wall and next use her fist to expand and give initial shape of the belly of the vessel (fig 11f), this was not noticed with the rest of the Yongphang potters so it must be a preference followed by this particular potter. In most cases it was observed that both Pongo and Yongphang potters that after the cavity of about 5cms depth is made with the help of pestle the potters use paddle and anvil to begin shaping the vessel. It was observed that initially the paddle is dipped in a basin filled water placed beside her and with the paddle still dripping with water is tapped lightly on the anvil (fig 11b), this is done 2 -3 times before the work begins. The potter holds the anvil by the left hand inside the inner wall of the vessel and pressed against the paddle on the exterior initially on the upper half and gradually extends all over the surface. Till this time the vessel is placed on her lap over a rag that permits her to slowly rotate the vessel while beating(fig 11 c-d, f-h).

Fig 11: Manufacturing technique: (a) Pongo woman potter making a cavity using a wooden pestle; (b) adding drops of water to the anvil; (c)-(d) initial shaping of vessel by Pongo potter ; (e) Yongphang potters making cavity on the clay lumps with the help of wooden pestle; (f) a Yongphang potter using her fist to expand and smoothen the interior surface; (g)-(h) initial shaping of the vessel by Yongphang potter

It has been observed that in both Pongo and Yongphang villages, potters shape the vessels in identical manner and also exhibits similarities in the sequence of techniques. The initial shaping and the desired size of the neck follows and for this purpose the vessel form is

shifted and placed on pot stands made up of broken vessel that is turned upside down. The neck and rim portion of the old pots/ broken vessels are used as cradle or pot stands for formation and shaping of new vessels. For this purpose, a potter from both villages may have several sizes of the broken vessels for the size of the vessel she wishes to manufacture (fig 12b). For Pongo potters the back of the palm replaces the anvil during the initial shaping of the neck and the plain paddle is used at this stage (fig 12a). The pot stand is rotated at certain intervals for consistency in the vessel neck formation. In the process of beating with the paddle, the upper half becomes slightly thin to which a coil is added on the exterior (fig 12c-d), welded and joined to the body using the thumb after which a plain and flat paddle smaller in size than the paddle wrapped with cords is employed for smoothening locally known as *dükkahdhandha*. The shaft of this particular paddle is somewhat round, smooth and has a pointed butt end is used for smoothening at various stages. Holding the flat working end of the paddle, the handle or shaft of this paddle *dükkahdhandha* is used to smoothen the interior surface of the vessel in a semi-circular motion (fig 12f). Next, the flat working end is used to smoothen the lip of the vessel and leaves it flat and smooth (12g). In Pongo village it was noticed that after forming the neck and lip of the vessel with the plain paddle, the uneven edges on the lip is sliced off with a flat and sharp bamboo split that is hewn to a point at one end *onungling* (fig 10 h) after which a coil of about 15cms is formed (fig 12 i) and joined on the exterior of the lip (fig 12 j). Then this is joined by the same method used by the Yongphang potters. While the coil is being joined the finger is dipped in the water frequently so that clay don't stick to the hands and also to ensure plasticity, sometimes they are also pinched so that the added coil joins properly to the lip. Pongo potters commonly use the plain paddle locally called *appong* and dabs ligthy the joint area using the back of her palm held inside against the dabbing. Also this paddle exhibits the same features with similar function as *dükkahdhandha* and is used by the Pongo potters for smoothening and trimming the lip and the inner neck region (fig 12k). After this process the exterior shows mouth of the vessel with slightly outturned rim, concavity in the neck and straight lips. The forming of mouth and neck is clearly found to be crucial as this is will determine the size of the vessel. Next comes the shaping of the lower half comprising the body and base. The vessel is slightly tilted in a slanted position on the pot stand and the same process of anvil and corded paddle is employed by both Pongo and Yongphang potters.The expansion and shaping of the vessel body is done with the pot still being placed on the pot stand. Since the vessel is placed on a stand, the potters keeps rotating the stand for an even finish (fig 12 l). Both Pongo and

Yongphang potters use the anvil to lift and change position while shaping the body and the base.

Fig 12: forming the neck and mouth: (a) plain paddle used by Pongo potter; (b) various sizes of broken vessels used as pot stands; (c) Yongphang potter shaping and forming the neck and mouth; (d)-(e) adding and joining a coil to the lip of the vessel; (f)-(g) smothening the interior with wooden paddle *dukkahdhandha*;(h) slicing the uneven edges, Pongo village; (i)-(j) preparing coil and adding to the exterior of the lip;(k) smoothening with the pointed end of the shaft; (l) shaping the lower half of the vessel

To give a final shaping on the neck upto the maximum angle that forms the shoulder of the vessel, the spine of the corded paddle is used for smoothening in upward as well

downward movement (fig 13 a-b). The whole process ends in leaving the neck region with vertical bands executed by the spine of the paddle and the lower half with horizontal bands not clearly aligned but superimposed. The paddle impression left on the vessel is purely based on how it is held while shaping. But there is a strong indication of designing the neck of the neck with vertical bands executed by the spine of the corded paddle. The impression that falls on the neck region exhibits a uniform vertical bands that could probably be misinterpreted as using a comb like instument for decorating the vessels. On the other hand the use of aluminium wires wrapped around the wooden paddle could be another reason for the well defined impression. Throughout the process in shaping the neck the palm is kept inside the vessel against the movement and pressure applied on it. As the vessel acquires the desired size, the pressure applied by the paddle lessens till the potter feels it right to be left for drying.

Fig 13: shaping of neck with the spine of the corded paddle (a) Pongo potter (b) Yongphang Potter

Except for cooking vessels Pongo and Yongphang potters add another coil at the base for vessels that are purely meant for other purpose. Such pots functions as decorative vase kept at home. The coil for such decorative vessels are smaller, attached and joined like it is done at the lip, round coil is pinched and flattened to form a ring base (fig 14a-b). Further these vessels are provided with double ringlets having apertures that are positioned on the opposite side corresponding to each other (fig 14c). Similarly in the same alignment down at the bottom where the base is formed, two holes are made on the ring of the base that falls within the same line as the ringlets using *shuling* by Pongo potters and *dükkahdhandha* by the

Yongphang potters(fig14d-h). Bits of clay is then added in applique to decorate the point where the handle adjoins the body. The applique is fashioned in the form of spikes and decorated in pairs pointing towards each other on both sides of the handle (fig 14c). This perforations and apertures are primarily made for inserting threads or ropes for hanging or for safe transportation for commercial purpose (fig14i-j). Since the vessel itself is for decorative purpose the local people use them for planting flowers, if not without the ropes they rest inside the house with flower arrangement or for storing items.

As for the cooking vessels, both village make two different kinds of handles i.e. a handle with a solid lump of clay molded to a rectangular flat block of clay and attached just below the lip at the neck of the vessel among the Yongphang potters (fig 14k) and attached along the lip for the Pongo potters (fig 14 l). After attaching the lump of clay to the body the same method of welding and joining employed during joining of coils is applied. Also the paddle is used to secure the attachment as well as for smoothening. The location of the handle in domestic cooking vessels indicates easy handling of the vessel or pot while it still hot.The other type of handle is in the form of a ring for handling. For the preparation of such handle, firstly two holes are made using the pointed end of *dükkahdhandha* or *shuling, appong* one on the neck of the vessel and another one at the angle of the shoulder, making sure that the two holes are perpendicular in the same line (fig 14 m). A coil is then prepared and somewhat flattened with the ends twisted and made pointed to be inserted in the holes (fig 14 n-o). After inserting it is then joined to the body by drawing clay from the coil as well the main body with wet fingers. The tip of the coil that is inserted is smeared and welded in the interior surface using thumb and index finger. It is to be noted wherever such joining and attaching of coils occurs, the application of water while using paddle or the fingers is primarily important.

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Fig 14 Preparation of base and handles (a) coil attached to the base at Pongo, (b) joining of coil to the main body at Yongphang, (c) vessels with ringlets, Pongo village (d) making perforations on the base of the vessel on the ring, Pongo village, (e) –(h) perforation technique by Yongphang potters for ringlets, (i)-(j) inserting cords of bamboo skin for suspension, (k) attaching a clay lump for making handle, Yongphang, (l) attaching a clay lump for handle, Pongo village, (m) making perforations on the side of the vessel, (n)-(o)attaching a coil for fixing handle

Besides the normal cooking vessels, the potters here also manufacture a perforated vessel that is used for steaming a specific type of rice locally grown in the jhum fields. For the preparation of the vessel, the same method is applied at the initial stage but after the base of formed, coils are added one above, welded by hand and joined by beating with paddle and anvil. The process of adding coils continues till the required size of the vessel is reached. This coiling method is also noticed among the Laruri potters of Pochury tribe (see Vasa 2008, 2011). After completing the vessel, it is left to dry till it becomes leather hard. After which perforations are done using a bamboo stick that is sharpened at one end and blunt at the other end . The method of perforating the vessel is simple, the shaft of bamboo stick is held with both palms, and keeping the vessel upside down the sharp end of the bamboo is twisted on the base of the vessel and bored till one third of the bamboo stick goes inside (fig 15a). The same process of making perforated vessels is also encounted among the Tanhai potters of Konyak tribe (Vasa 2011). A pot can comprise of more or less than 30 perforations, basing on the size of the vessel (fig 15b). Among the Pongo potters, it was told that there was a belief or a taboo in the manufacture of perforated vessels. According to oral tradition there is a saying that women potter who frequently makes such type of vessels loses their eyesight or go blind. Only a few potters are gifted to use the *shuling* for making perforations. This vessel continues to be in use today as they still cultivate the different species of rice that is cooked from steam emited from another vessel placed below.

Fig 15: making of perforated vessel (a) inserting the *shuling,* (b) perforations concentrated on the base

Almost all the Pongo and Yongphang vessels are provided with lids. Lid making involves hand molding technique. A lump of clay is molded and flattened in a disc shape with maximum thickness concentrated gradually towards the centre of the disc. Clay from the edges are drawn a few inches (3 inches approx) towards the centre, away from the edge, and pinched to form an inner vertical ring normally measuring one inch or two inches in the shape of a crown (fig 16a) to fit the interior mouth of the vessel. As the crown is being formed, the potter constantly checks by covering the vessel for which the lid is being prepared. The flattened area around the crown is smoothened with a wooden paddle (fig 16b). The exterior of the lid is provided with a knob by drawing clay and pinching towards the centre to form a straight vertical knob as observed among the Yongphang potters but with an additional form among the Pongo potters who also fashions the knob in a cross shape 'X' (fig 16c). Differences are also seen in the shape of the lid, pongo potters manufactures flat lid (fig 16e) while the lid made by Yongphang potters finishing the lid sloping from the top to the point where it comes in contact with the mouth of the vessel, it is bevelled (fig 16i). The lid is placed on top of the vessel to check the size before smoothening and finishing (fig 16g). After acquiring the right size a wooden paddle is again employed to smoothen the surface till the lid is done, dipping the paddle time to time so that clay don't stick to the paddle (fig 16h). Unlike the vessel shape and its usage including the cord markings over the vessel which is similar in both Pongo and Yongphang, the knobs as well the fashioning of the lids can clearly be used to distinguished the origin of the vessel.

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Fig 16: process of making lids:(a) Pongo potter modeling clay in disc shape &drawing clay towards the centre to form a crown, (b) smoothening the flattened portion, (c) knob fashioned with 'x', Pongo village, (d) fashioning of a knob by Yongphang potter, (e) types of lid in Pongo (f) a Yongphang potter modeling lid, (g) checking size of the lid with the vessel (h) smoothening and finishing with corded paddle, (i) bevelled lid of yongphang, (j) types of knobs on lids of Yongphang

V. Decorations:

The decorations on the vessel of both Pongo and Yongphang villages are predominantly incised with criss cross lines but superimposed on the paddle impression and concentrated on the neck of the vessel. The incised decorations is made on the neck region, lid, handles and the ring at the base using a sharpened bamboo split *onungling* by the Pongo potters and pointed tip of *ahna* by Yongphang potters. The decorations on the neck are mostly criss-cross pattern (fig 17a-b) , double V that appears like lozenges. On the lid too the same instruments are used for incising various patterns according to her own likes and desire. As such, there is presence of varieties of pattern (fig 17c-e,i-j). On the lid a potter was noticed incising with *ahna*, a floral pattern in Yongphang. The ring at the base is also marked with incised pattern in the form of lozenges. The non-cooking vessels meant for decorative purpose is elaborately decorated with appliqué in the form of spikes below the shoulder at certain intervals all round it. The location of this appliqué pattern differs from person to person (fig 17e-f). The application of the spikelets is not just attaching small clay lumps over the body as noticed in Runguzu village of Chakhesang tribe (see Vasa 2011) but here potters from both villages

make small holes in a linear fashion using pointed end of *appong* (Pongo) and *dükkahdhandha* (Yongphang) (fig 17b). Bits of clay is rolled between thumb and index finger, (fig 17c) and inserted inside the hole keeping the other hand inside the vessel to aid in welding and joining from the interior to the main body. The finger tips are used to smoothen the area after attaching it. This particular vessel is provided with ringlets for suspension purpose and in each ringlets spikes are attached in twos facing each other (fig 17f), some markings are also left on the handle in incised form. Overall, the designs and decorations are elaborate in each vessel beginning with the cord impressions left on the body while shaping, although superimposed. On the neck region the impression of vertical patterns with the use of the spine of the corded paddle is consciously and carefully applied, followed by incising different geometrical pattern and appliqué as well. On query regarding the decorations the potters replied it has no symbolic meaning attached to the designs, they are rather decorative in nature. But in Yongphang a lady potter said that the neck and body are two different parts (just like how the physical features of a human being is described) and because of this reason the designs impressed on neck and body is different. This is by far a different view as noticed among the laruri potters of Pochury tribe and Runguzu potters of Chakhesang tribe both under Phek district, and also among the Khusama potters of Angami tribe where the incised pattern as well as applique applied on the vessel has symbolic meanings pertaining to agriculture related festival (Runguzu &Khuzama rice brewing jars) and funerary or socio-religious significance (Laruri vessels).

Fig 17 Patterns and types of decoration: (a) incised criss-cross pattern, Pongo (b) incised pattern in Yongphang and perforating the vessel, (c) rolling bits of clay into spikes (d) filling and inserting the perforation with spikes (e) a full vessel showing different patterns of decoration,Yongphang, (f) a vessel after firing showing different patterns of designs, Pongo (pic- Y. Changkiri).

VI. Forms and functions of vessels:

Vessels come in various sizes to serve its purpose of cooking, storing etc or in a case of a well equipped house each food item preparation may have its own vessel or sets of vessel. The observation made from the potters during the process has shown that right from the beginning of the manufacturing process, when she assess the proportions of the raw materials, a potter already has in mind the particular function and size of the vessel to be made. The intended function of the finished product is also made clear to the consumer which is visble in the vessel's shape, size etc. While a potter makes a vessel with a specific function

in mind, the usage and the purpose of buyers or the consumers may vary. The types of vessels manufactured by Pongo and Yongphang potters are listed below:

Names and types of Vessels and its functions:

Pongo Village:

1. *Haodük*: Functions as cooking vessel, provided with a handle on one side. Use of this vessel is for cooking rice, and the same vessel is manufactured in various sizes that can cook 5 cups of rice (one cup can hold 250 ml of water) upto 1 kg of rice.
2. *Dükpettura*: this vessel also functions for preparing rice but comes in smaller sizes than *Haodük* . The vessel can cook upto 2 cups of rice.
3. *Owdük*: This is a decorative vessel and is manufactured in various sizes that can hold 1.3 litres of water to 1.5 litres. The usage of this vessel is for decorating their homes with cut flowers or artifical flowers and also used as flower pots for planting various flowers and plants.
4. *Ngüdük:* This vessel is the perforated vessel that is used for cooking sticky rice from steam. This vessel is normally bigger that the other types that has a cooking capacity of minimum 2 kilos of rice.

Yongphang village:

1. *Dukkha-a* : storage jar for yeast and grain
2. *Dukkha tuk* : jar for brewing rice beer
3. *Khao-o tuk* : cooking vessel
4. *Ngutuk*: perforated vessel

One of the most interesting type of vessels amongst the ones mentioned above is the perforated vessel called *ngüdük* in Pongo and Yongphang as well. While the rest of the vessels are either the cooking vessels and non-cooking vessels the use and function of this particular vessel *ngüdük* is quite different owing to the perforations at the base. The steaming of sticky rice from this vessel requires another vessel bigger and larger not only in size but with a wider mouth in comparison with the perforated one. The preparation of sticky rice in *ngüdük* requires the use of banana leaves. The banana leaf is initially put over the fireplace in flame for a few seconds while still holding the stalk and turned over to heat the other side as well (fig 18a). This makes the leaves soft and free from any impurities, also because the leaves acts as an agent while steaming. Inside at the base of the perforated vessel banana leaves are placed covering the whole of the perforated area (fig 18b). Meantime the amount

of rice to be steamed is measured and soaked in hot water for about 20 minutes. (Other times if it is soaked in cold water the duration is longer). For the present demonstration rice was soaked in hot water in an aluminium basin and within 20 minutes it was ready to be steamed. There are varieties of rice grown but for this preparation a red rice variety locally called as *koklok* is the preferable one. Rice is now scooped from the basin and transferred to the perforated vessel over the banana leaf (fig 18c). Some more banana leaves are used to cover the vessel (fig 18d) using the same process in heating over the fire before spliting the leaf blade from the midrib. After covering the vessel the loose ends are tied using rope made from the skin of fresh bamboo sealing it properly so that no air escapes while steaming (fig 18e). A bigger vessel with wider mouth opening is filled with water over which the perforated one is to be placed. At the time when this process was demonstrated the lady of the house could not locate the right size of the vessel made from local clay so an alumnium vessel was used to serve the purpose. Although some amount of water gets added along with rice while transferring, the same is drained out using a sharpened bamboo stick that is poked in the perforations (fig 18 f). this is required as the steam from the vessel below has to penetrate through the perforations for rice to get cooked. Both the vessels are placed one above the other over the fireplace. With the fire on, the point where the two vessels touch one another is then sealed with a paste made from ash and the drained out rice water (fig 18 g). The fire also helps in detecting air pockets as one can notice steam escapig from it. After completely sealing the entire circumference, the steam from the lower vessel penetrates into the perforations thereby rice gets cooked through this (fig 18 h). The whole process after placing over the fireplace takes about 40-50 minutes for rice to get cooked through steam. The vessel is then lifted and allowed to cool down (fig 18i) and then taken as a mid day meal (fig 18j).

The preparation of steamed rice from perforated vessels had a special place since time immemorial. It has been narrated in Pongo village, that *Monyü* is the most significant festival for the Phoms and the celebration takes place during the 1st week of April that normally lasts for six days. The following two days i.e. day 7 & 8 is observed as *mootra* (small festival) and during this two days feasting continues among the relatives exchanging rice prepared in this manner along with cooked meat. The significance of *mootra* is bonding with relatives for good will and unity amongst each other.

Besides the cooking vessels, in the past big jars for storage facility was also manufactured and they are kept seperately in the granary (fig 18 k-n). These days they are replaced by plastic and metallic wares. One of the reason for the dying tradition of the storage is the durability of the modern storage facilities which are readily and easily available in the

market. It has been said that jars made from clay are easily breakable if one is not careful, and the labour, time and energy spent to make such vessels goes in vain. They say that the easy availability of plastic and metal or aluminium storage facility has relieved them from producing such big jars. Besides this the availabity of natural resources such as bamboo and cane enables them to make large storage baskets for supplementing jars made of clay. In the granary it was noticed that smaller vessels that are already broken and which cannot be used for cooking purpose has a secondary usage in covering the storage jars as lids (fig 18m) or a flat slab of stone as lid as noticed in Yongphang (fig 18 n)

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Fig 18 Functions of vessel: (a) heating banana leaves, (b) Placing banana leaves at the base of the perforated vessel, (c) filling the perforated vessel with soaked rice (d) covering the vessel with banana leaves (e) sealing the vessel by tying with a rope of bamboo split (f) poking the banana leaf through the perforations (g) sealing with a paste of ash and drained out rice water (h) preparation of rice cooked with steam (i) letting the vessel cool down (j) serving the steamed rice in banana leaves, (k)storage jar at Yongphang (l)storage jar at Pongo (m) smaller vessel used as lid for storage jar, Pongo (n) a slab of stone used as lid to cover the storage jar, Yongphang

Basing on the data on manufacturing technique a consideration can be made on the technological criteria elsewhere. The forming of vessels by moulding with the lower half comprising the base followed by addition of coils to form the upper half of the vessel and finishing and shaping done by cord wrapped paddles have close parallels to Ban Na Di in Thailand. It has been cited earlier (Vasa 2008) that the paddle and anvil technique in pot manufacture is widely distributed all over the Southeast Asian countries. Further the applique and incised decorations on the vessels are also found to be common features in pottery of Cambodia, Thailand and Vietnam.

VII. Drying and Firing

After completing and achieving the desired decoration (s) on the vessel, the potters place the vessels in an open area to fully dry till it becomes leather hard. Potters from both village dry their vessels in open space outside their house in the open air to receive sunshine, but only to a certain extend of the number of days they are left out to dry, in the sun (fig 19 a-b,e). Later

on they are shifted indoors and placed above the fireplace as well (19d, f). Depending on the heat emitted by the fire a vessel becomes leather hard. If a potter has more vessels to be dried, the previous batch of vessels are placed in shady or dark area in the kitchen where sunlight don't penetrate much (fig 19 c). In this way she can fire both batches of vessels at one go. Drying of pots extends to about 7 days or even more depending on the

Fig 19 Drying process : (a) Yongphang potters with the set of pots (b) Pongo potters with their complete set of pots ready for drying (c) dried pots placed on the floor in the kitchen under a long bench (d) set of pots above the fireplace, Pongo (e) pots being dried in open air at Pongo (f) set of pots above the fireplace at Yongphang

Firing of pots are done within the village or near a potter's own house if she has enough space. Pongo and Yongphang potters employ bonfire in a kiln temporarily constructed just on the onset of firing. The area is cleaned and cleared to prevent the pots from cracking during firing. Construction of the kiln is done by the women themselves.

Preparation of kiln and firing procedure in Pongo

The fuel used for firing is fresh as well as dried bamboo and dried wood of rhus sp. (fig 20 a). A squarish structure is made using 4 boulders with a rough dimension of 80-90 cms on all sides (fig 20 b) over which firewood *nahpü* of rhus sp is placed to form the frame of the kiln. Inside the structure a bed of dried bamboo is formed overlapped with fresh bamboo. Next a row of firewood of *nahpü* is laid on the frame (fig 20 c)over which a mixture of dried bamboo, twigs and branches of *nahpü* is laid (fig 20 d). Pots to be fired are arranged horizontally along with the lids over this layer (fig 18e). The piling of fresh and dried *nahpü* continues over the vessels enough to cover the vessels (fig 20 f). At this time the frame bar is also raised on all the sides. More dried bamboos are added over *nahpü* (fig 20 g), moreover fresh firewood of *nahpü* and fresh bamboo are vertically leaned to the kiln frame on all the 4 sides in sufficient amount (fig 20 h) standing to about 147cm. After adding all the required amount of fuel, the top most layer is again filled with a layer of dried bamboos. A bunch of dried bamboo is lit to flames and inserted at the floor or bed consisting of both dried and fresh bamboo in 2 or 3 different apertures (fig 20 i). As the fuel catches fire a lot of smoke is emitted from every open spaces. More firewood is added if required in order to block air from passing in and out from the kiln (fig 20 j). The initial temperature of heat recorded after 3 mins was 148°f and after 10 mins-15mins it rose to 859°f - 885°f (fig 20 k) after which the flame began to slowly come down (fig 20 l). The whole process of firing the vessels took about 45 mins and the vessels were removed from the firing kiln using long poles (fig 20 m). The hot vessels on removal were placed in a cold spot specially on a layer of stones that are arranged near the firing area. While the vessels are still hot, a taro is used to smear the body of the vessel with the help of a twizzer made of fresh bamboo (fig 20 n) and then cleared off the ashes by brushing it off with a stalk of fresh plant (fig 20 o). After smearing it with taro it is still left over a platform of stones till they are cooled and ready to be transported back.

a

b

c

d

e

f

g

h

Fig 20 Pot firing at Pongo: (a) fuel for firing (b) structure of kiln (c) placing a layer of firewood *nahpü* over the wooden frame (d) addition of more dried bamboo over the layer (e) placing of pots to be fired (f) covering the layer of pots with dried branches (g) adding dried bamboo over the dried branches (h) covering the kiln with a mixture of fresh and dried bamboo along with *nahpü* nahp (i) inserting a bunch of dried bamboo in flame (j)

more firewood and bamboo added to block all apertures (k) kiln in full flame (l) flame dying out (m) removing the fired pots with long poles (n) smearing the vessel with cooked taro (o) brushing off the ashes with fresh leaves (p) letting the vessel cool down.

Preparation of kiln and firing procedure in Yongphang

The fuel used for firing is fresh as well as dried bamboo and dried wood of rhus sp. (fig 21a). A squarish structure is made using 4 boulders with a rough dimension of 80-90 cms on all sides (fig 21b) over which firewood of rhus sp is placed to form the frame of the kiln. Next a row of firewood of is laid on the frame (fig 21c) over which vessels to be fired are arranged with mouth facing downward (fig 21d). While some women are into arranging the vessels in the kiln, another woman sprays ash over the vessels (fig 21e). At this time the frame bar is also raised on all the sides and the vessels are covered with more firewood on top (fig 21f) moreover fresh firewood of and fresh bamboo are vertically leaned to the kiln frame on all the 4 sides in sufficient amount with a mixture of fresh bamboo and firewood standing to a height of about 160cm (fig 21g). After adding all the required amount of fuel, the top most layer is again filled with a layer of dried bamboos. A bunch of dried bamboo is lit to flames and inserted from the top of the wood pile and unlike Pongo the Yongphang potters use firewood and dead branches that easily catches fire. More dried twigs or dead branches are added if required in order to block air from passing in and out from the kiln(fig 21h). The initial temperature of heat recorded after 10 mins was 500°f. After another 10 mins the temperature of heat went up to 820°f . The highest temperature recorded was 829°f (fig 21i) after which the flame began to slowly come down (fig 21j). The whole process of firing the vessels took about 45 mins and the vessels were removed from the firing kiln using long poles (fig 21k). The hot vessels on removal were placed a few feet away from the kiln in the ground. While the vessels are still hot, a cooked taro is used to smear the body of the vessel holding the vessel with the help of a twizzer made of fresh bamboo (fig 21l). After smearing it with taro they are arranged in a linear fashion letting the vessels lean on a log of wood (fig 21m) till they are cooled down and ready to be carried and transported back.

a

b

c

d

e

f

g

h

Fig 21: firing at Yongphang: (a) fuel for firing of vessels (b) Kiln in squarish structure with wooden frames (c) laying of firewood (d) arranging the vessels to be fired with mouth facing down (e) spraying ashes over the vessels (f) covering the vessels with firewood (g) covering the four sides of the kiln with bamboos and firewood (h) a bunch of dried bamboo in flames inserted inside the wood pile (i) the flame at its best (j) dying of flame (k) removing the hot vessels with long poles (l) smearing the vessel with cooked taro (m) lettin g the vessels cool down (n) dousing the fire with water

Chapter 3

Discussion and Conclusion

The present ethnoarchaeological investigation of pottery tradition in Pongo and Yongphang villages has given an insight into the various factors that characterizes the indigenous techniques and the survival and continuity of the age- old tradition. The detailed observation and description of the manufacturing process shows that it involves numerous fields of activity and also calls for different levels of skill.

Furthermore, the present work also gave an insight in the area of scientific and technological know-how of their ancestors. Their ability to identify and locate the right sites to obtain clay of superior quality, the technical methods in clay processing and the usage of right firewood for fuel and the knowledge in determining when the vessels are adequately fired, among others are admirable. Pottery as discussed in the preceding chapters have shown that it served as utilitarian purposes ranging from everyday uses and for other domestic requirements (fig 20 a-c). The techniques observed in both Pongo and Yongphang villages in clay processing and also in the manufacturing process shows similarity along with the usage of similar pottery tools. The difference is seen in fashioning as well as the shape of the lid. During the vessel firing they adopt different ways of placing the vessels in the kiln prepared with the Pongo potters in upright position in contrast with the Yongphang potters placing the vessels with mouth facing downwards. Overall it has been observed that not many different types of vessel are made, rather the making of vessels are based on the size with one type of vessel in various sizes on the basis of their need for their utilitarian function. Table

However there has been decline in the practice of pottery making with modernization and easy access to markets that has replaced the earthen pots with plastic and aluminium pots which were considered to be more long lasting and handled with greater ease compared to earthen wares. According to informants from both village, there were many potters in the past because clay vessels were the main vessels used in the area as well as the neighbouring villages who they had trading contacts with. But with the advent of technology that brought about changes in the usage in the utensils as well as for storage, pottery making is no longer a lucrative job. But it has been very encouraging to see that although the tradition of cooking all kinds of dishes in earthen pot has declined coinciding with less demand of earthenware,

the potters have initiated in coming with new innovations and ideas and an example is the decorative vessels (fig 23a) and a kettle (fig 23b).

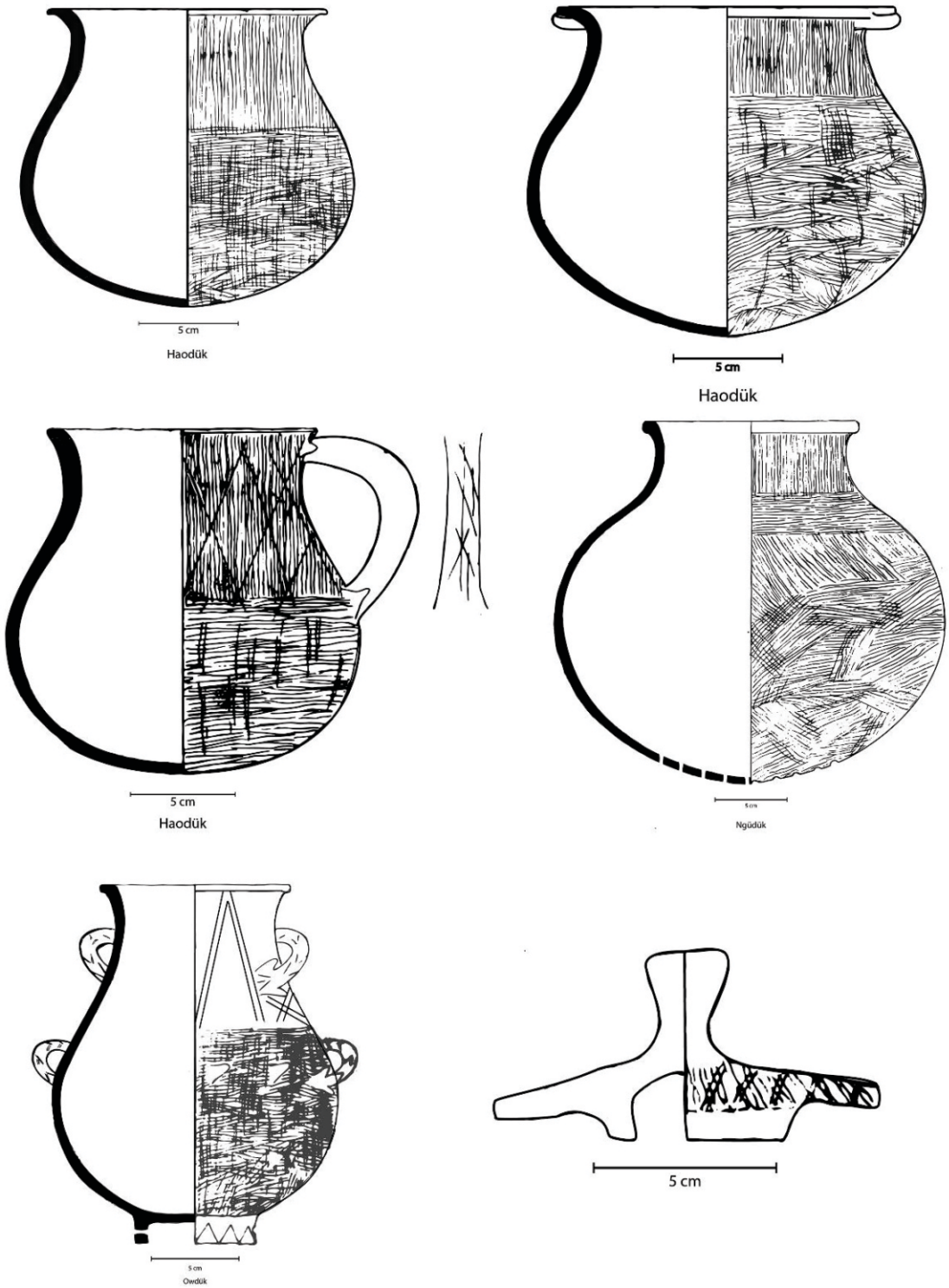

Fig 22a: Form and types of vessels, pots and lid from Pongo Village

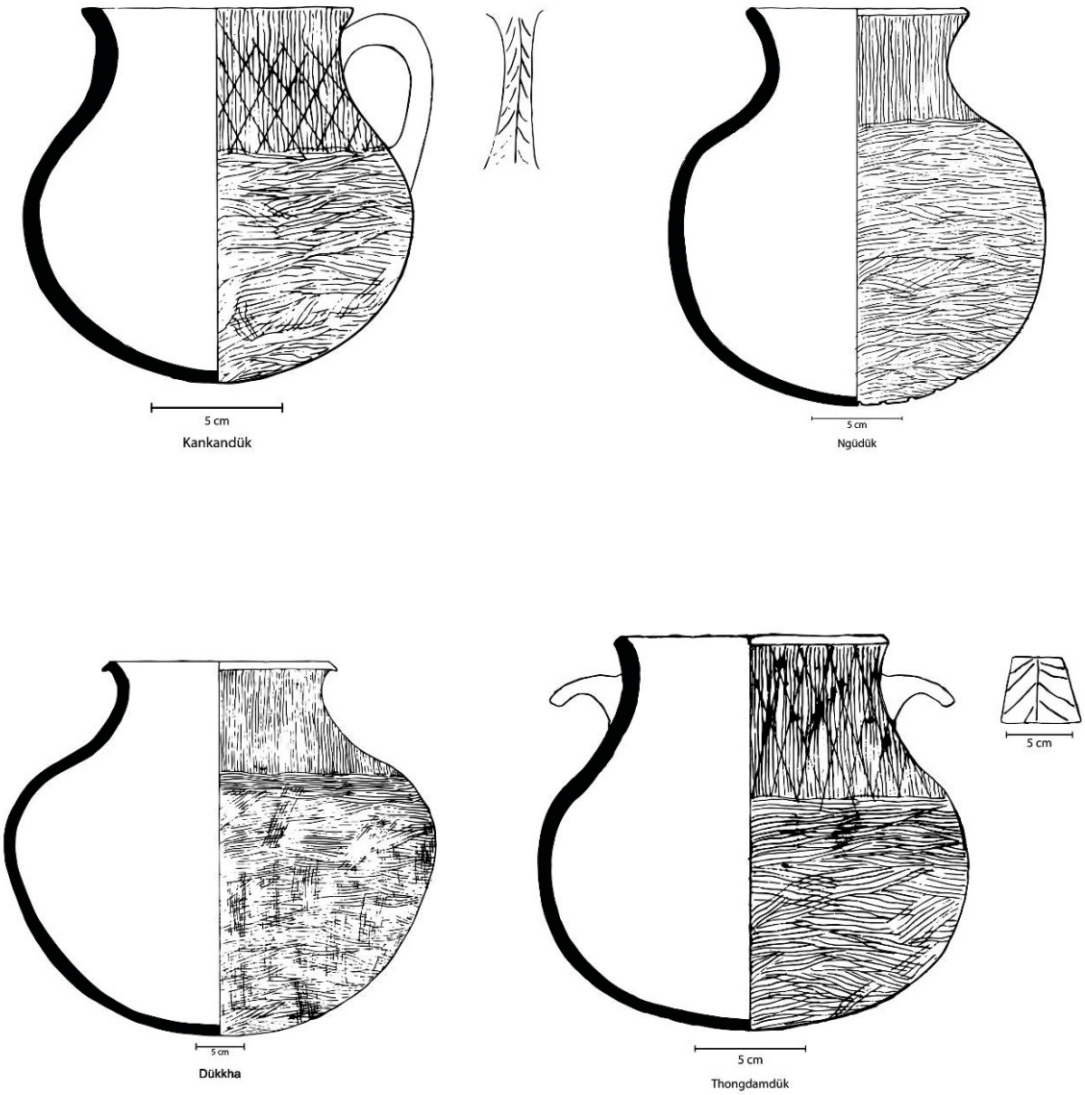

Fig 22b: Form and types of vessels and pots from Yongphang village

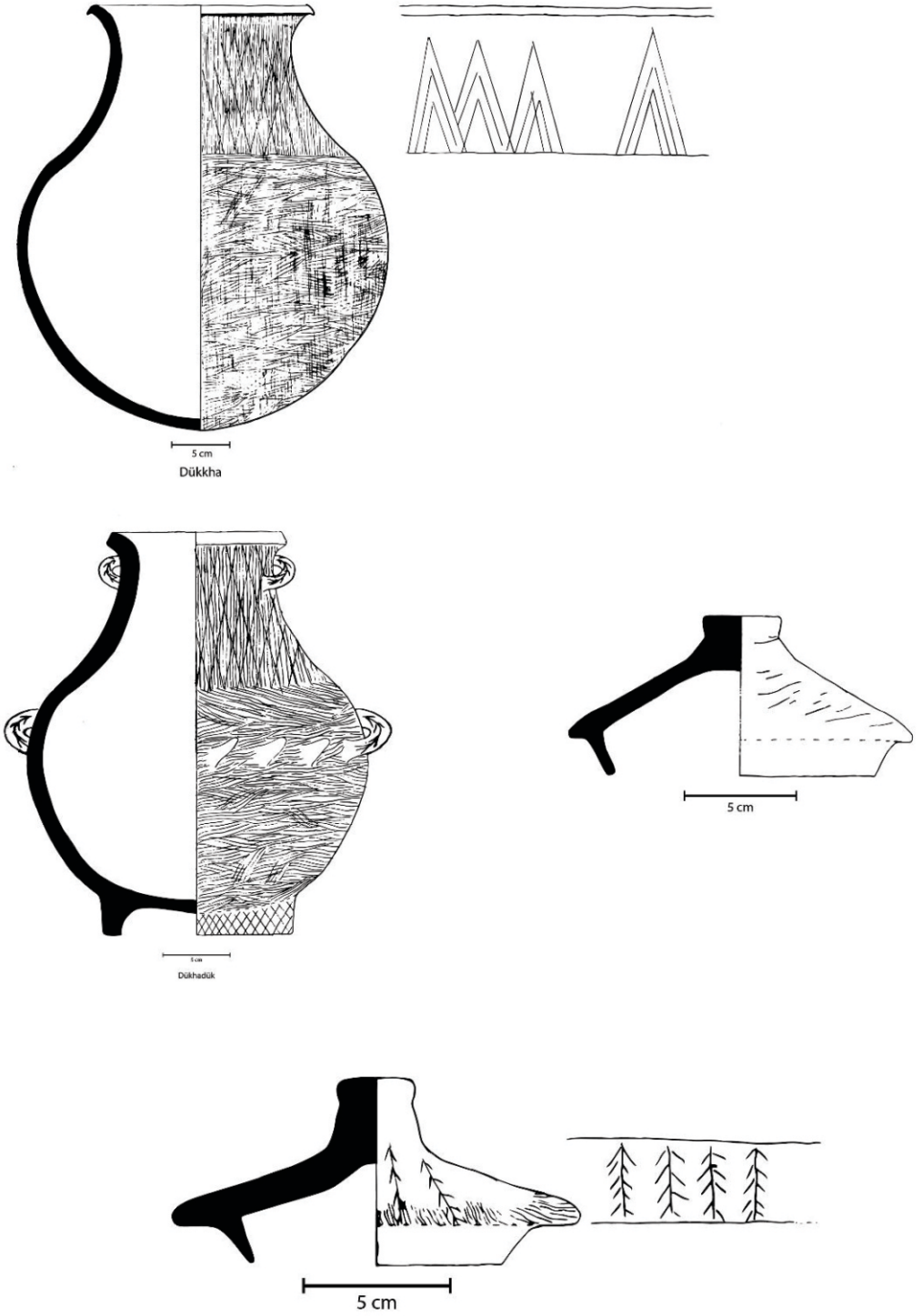

Fig 22c: Form and types of vessels, pots and lids from Yongphang village

TABLE 3: Ethnographic pottery recording : Pongo Village

Name of the vessel	Dimension of the vessel before firing			Dimension of the vessel after firing					Function of the vessel	Decoration	Surface treatment	Mould or composite	Intake capacity in volume
	Inner height & outer height	Max diameter	Max thickness	Throat diameter before firing	Inner height & outer height	Max diameter	Max thickness	Throat diameter after firing					
1.(i)Haodük	16.3 cm & 17.3 cm	11.5 cm	5 mm	11.2 cm	15.8cm & 17cm	11.5 cm	4 mm	10.5 cm	Cooking	superimposed cord impressed, one handle with incised decoration	Smeared with boiled taro	mould	Can cook five cups of rice
(ii) do-	15.4 cm & 15.7 cm	11 cm	5 mm	10.5 cm	15. cm & 15.3 cm	11 cm	5 mm	10.5 cm	do-	do-	do -	do-	Can cook one kg of rice
(iii) do-	15 cm & 15.6 cm	10 cm	6 mm	9.8 cm	14.5 cm & 15 cm	9.3 cm	6 mm	8.5 cm	do-	do-	do-	do-	Can cook three cups of rice
(iv) do-	15.4 cm & 15.8 cm	11 cm	7 mm	10.5 cm	15.3cm&15.5 cm	10.9 cm	5 mm	10 cm	do-	do-	do -	do-	Can cook one kg of rice
(v) do-	15 cm & 15.4 cm	11 cm	6 mm	10.5 cm	14.8 cm	11 cm	5 mm	10 cm	do-	do-	do-	do-	do-
2.(i)Dükpettura	13.9cm & 14.6 cm	9.5 cm	5 mm	9 cm	13.5cm & 14.4 cm	9 cm	4 mm	8.5 cm	do-	do-	do-	do-	Can cook two cups of rice
(ii) do-	12.4 cm & 13.9 cm	9.5 cm	5 mm	9 cm	12 cm & 13 cm	9.4 cm	5 mm	8.9 cm	do-	do-	do-	do-	Can cook two cups of rice
(iii) do-	12.5 cm& 13.3 cm	9.4 cm	5 mm	9 cm	12.1 cm & 12.6 cm	9 cm	5 mm	8.6 cm	do-	do-	do-	do-	Can cook two cups of rice
3.(i)Owdük	15.1cm & 15.6 cm	8.7 cm	5 mm	8.6 cm	15 cm & 15.5 cm	8.5 cm	5 mm	8.5 cm	Decoration	Superimposed cord impressed, both incised & appliqué	do-	do-	1.3 litre

TABLE 4: Ethnographic pottery recording: Pongo Village

Name of the vessel	Dimension of the vessel before firing			Dimension of the vessel after firing					Function of the vessel	Decoration	Surface treatment	Mould or composite	Intake capacity in volume
	Inner height & outer height	Max diameter	Max thickness	Throat diameter before firing	Inner height & outer height	Max diameter	Max thickness	Throat diameter after firing					
(ii) Owdük	16.3 cm & 17.1 cm	9 cm	6 mm	9 cm	16.2 cm & 17 cm	8.8 cm	6 mm	8.8 cm	Decoration	superimposed cord impressed, incised & appliqué and two handles at both sides,	Smeared with boiled taro	Mould	1.5 lt
(iii) do-	15.8 cm & 17.1 cm	9 cm	5 mm	9.5cm	15.7 cm & 17 cm	8.7 cm	4 mm	9 cm	do-	do-	do-	do-	do-
(iv) do-	15.8 cm & 16.4 cm	8.3cm	6 mm	9.3cm					do-	superimposed cord impressed, incised &, appliqué and two handle at both sides		do-	
(v) do-					15.4 cm & 16.4 cm	9 cm	3 mm	8 cm	do-	do-	do-	do-	1.5 lt
(vi) do-					7.8 cm & 8.9 cm	8 cm	4 mm	7.6 cm	do-	superimposed cord impression, appliqué, and incised one handle	do-	do-	
(vii) do-					8.4 cm & 9.5 cm	8 cm	4 mm	7.6 cm	do-	do-	do-	do-	
(viii) do-					16.4 cm &18.2cm	8.6 cm	6 mm	8.5 cm	do-	Cord impressed, incised on the neck, appliqué	do-	do-	1.5 lt
4.(i)Ngüdük	18.9 cm &19.2 cm	13.6 cm	7 mm	12.3 cm					Steaming sticky rice	superimposed cord impressed and perforated at the base	NIL	do-	
(ii)	19 cm & 20 cm	14.2 cm	8 mm	13.6 cm					do-	do-	NIL	do-	

TABLE 5: Ethnographic pottery recording: Pongo village

Name of the vessel	Dimension of the vessel before firing			Dimension of the vessel after firing					Function of the vessel	Decoration	Surface treatment	Mould or composite	Intake capacity in volume
	Inner height & Outer height	Max diameter	Max thickness	Throat diameter before firing	Inner height & Outer height	Max diameter	Max thickness	Throat diameter after firing					
(iii)Ngüdük					24 cm & 25.3 cm	11 cm	4 mm	11.6 cm	Steaming sticky rice	superimposed cord impressed,	Smeared boiled taro	mould	Can cook 3 kg of rice
(iv)do-					21 cm & 22 cm	11.1 cm	5 mm	11.5 cm	do-	do-	do-	do-	Can cook 2 kg of rice
(vi)Haodük	15.7 cm & 16.7 cm	11.2 cm	5 mm	10 mm					cooking	cord impressed	NIL	do-	
(vii)do-	16.8 cm & 17 cm	11 cm	5 mm	10 cm					do-	do-	do-	do-	
(viii) do-					16.8 cm & 16.9 cm	12.3 cm	5 mm	12 cm	do-	superimposed cord impression	do-	do-	2.5 liter
(ix)do-					14 cm & 14.5 cm	9 cm	5 mm	8.9 cm	do-	Superimposed cord impression	Smeared boiled taro	do-	2.20 liter
(x)do-					12.8 cm & 13.4 cm	8 cm	5 mm	7.3 cm	do-	superimposed cord impressed, incised	do-	do-	Can cook two kg of rice
(iv)Dükpettura	12.6cm & 13 cm	11 cm	6 mm	10.1 cm	12.2 cm & 12.7 cm	11.5 cm	5 mm	9.5cm	do-	cord impressed, incised and applique	do-	do-	Can cook two cups of rice
(v) do-					12.2 cm & 13 cm	8.5 cm	4 mm	9 cm	do-	superimposed cord impression	do-	do-	1.20 lt
(vi)do-					11.3 cm & 12 cm	8.3 cm	5 mm	8 cm	do-	do-	do-	do-	do-
(vii)do-					10.5 cm & 10.9 cm	8.7 cm	4 mm	9 cm	do-	do-	do-	do-	do-
(viii)					10.8 cm & 11.7 cm	8.2 cm	4 mm	9 cm	do-	do-	do-	do-	do-

TABLE 6: Ethnographic pottery recording: Yongphang village

Name of the vessel	Dimension of the vessel before firing			Dimension of the vessel after firing					Function of the vessel	Decoration	Surface treatment	Mould or composite	Intake capacity in volume
	Inner height & Outer height	Max diameter	Max thickness	Throat diameter before firing	Inner height & Outer height	Max diameter	Max thickness	Throat diameter after firing					
1.(i)Dükkhadük					17.2 cm & 18.4 cm	8.3 cm	5 mm	8 cm	Storing yeast	superimposed cord impressed, appliqué & incised	Smeared with boiled taro	mould	1 kg of locally produced yeast
(ii)do-					14.3 cm & 16.1 cm	9.3 cm	6 mm	8.3 cm	do-	do-	do-	do-	3 cups of locally produced yeast
(iii) do-					25.6 cm & 28.8 cm	11.8 cm	6 mm	10 cm	do-	do-	do-	do-	Can store 4 kg of locally produced yeast
(iv) do-	17.5 cm & 18.8 cm	8.3 cm	6 mm	8 cm	16.9 cm & 19 cm	10 cm	1 cm	9.5 cm	do-	do-	do-	do-	One & half kg of locally produced yeast
2.(i)Kankandük					15.4 cm & 17.2 cm	11.5 cm	6 mm	10.5 cm	cooking	superimposed cord impressed, incised	do-	do-	Can cook 1 kg of rice
(ii) do-					17 cm & 18.5 cm	10 cm	7 mm	9.5 cm	do-	do-	do-	do-	Can cook 1 and half kg of rice
(iii) do-					17.2 cm & 18.2 cm	12 cm	7 mm	10.5 cm	do-	do-	do-	do-	Can cook 6 cups of rice
(iv) do-					17 cm & 18.1 cm	10 cm	6 mm	9 cm	do-	do-	do-	do-	do-
(v) do-					15 cm & 15.9 cm	9 cm	6 mm	7.5 cm	do-	do-	do-	do-	Can cook 3 cups of rice

TABLE 7: Ethnographic pottery recording: Yongphang village

Name of the vessel	Dimension of the vessel before firing			Dimension of the vessel after firing					Function of the vessel	Decoration	Surface treatment	Mould or compo site	Intake capacity in volume
	Inner height & Outer height	Max diameter	Max thickness	Throat diameter before firing	Inner height & Outer height	Max diameter	Max thickness	Throat diameter after firing					
(vi)Kankandük	15.3cm & 16.3 cm	9.5 cm	6 mm	8.3 cm	13 cm & 14.1 cm	8.5 cm	5 mm	8 cm	cooking	superimposed cord impressed & incised	Smeared with boiled taro	mould	1.2 lt
(vii) do-					10.5 cm & 11.1 cm	7.5 cm	6 mm	7 cm	do-	do-	do-	do-	600 ml
3.(i)Dükkha					38 cm & 38.5 cm	22.5 cm	6 mm	19 cm	Storing grain, rice & bamboo shoot	cord impressed	do-	do-	Can store 20 kg of rice
(ii) do-					33.3 cm & 35.5 cm	17 cm	6 mm	15 cm	do-	superimposed cord impressed, incised	do-	do-	Can store 15-18 kg of rice
4.(i)Thongdamdük					14.6 cm & 15.7 cm	11 cm	5 mm	9.8 cm	cooking	superimposed cord impressed & incised	do-	do-	Can cook 3 cups of rice
(ii) do-					14.4cm & 15.5 cm	11 cm	6 mm	9.5 cm	do-	do-	do-	do-	do-
(iii) do-					15.1 cm & 16.2 cm	12.1 cm	6 mm	11 cm	do-	do-	do-	do-	Can cook 3 cups of rice
(iv) do-	14.8 cm & 16 cm	11 cm	5 mm	10 cm	14.1 cm & 15.2 cm	11 cm	6 mm	9.5 cm	do-	superimposed cord impressions & incised	do-	do-	1 and half liter
(v) do-					16.5 cm & 17.9 cm	11.5 cm	6 mm	10 cm	cooking	superimposed cord impression & incised	do-	do-	Can cook 3 kg of rice

TABLE 8: Ethnographic pottery recording: Yongphang village

Name of the vessel	**Dimension of the vessel before firing**			**Dimension of the vessel after firing**					**Function of the vessel**	**Decoration**	**Surface treatment**	**Mould or composite**	**Intake capacity in volume**
	Inner height & Outer height	**Max diameter**	**Max thickness**	**Throat diameter before firing**	**Inner height & Outer height**	**Max diameter**	**Max thickness**	**Throat diameter after firing**					
5. Ngüdük					20.5 cm & 21.1 cm	11 cm	4 mm	9.5 cm	Steaming sticky rice	Perforated at the base, overlapping cord impressed & incised neck	Smeared boiled yam	mould	Can steam 3 kg of sticky rice
6. Kettle					11.7 cm & 12.5 cm	8.5 cm	6 mm	9 cm	Boiling water	One handle, spout & plain	do-	do-	1.2 liter (approx.)

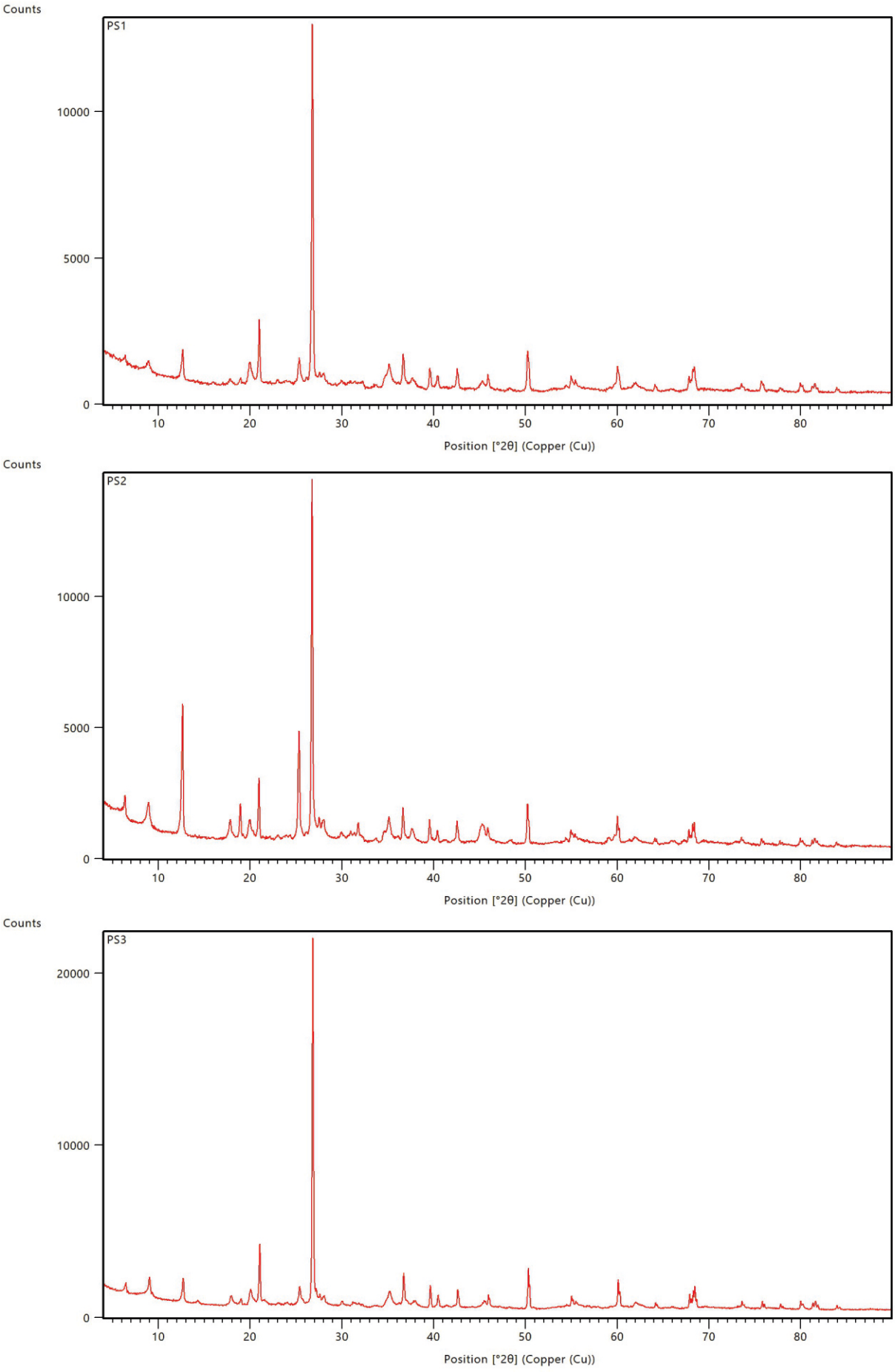

Fig 24: PS1-3, X-Ray Defraction Analysis of Pongo Village

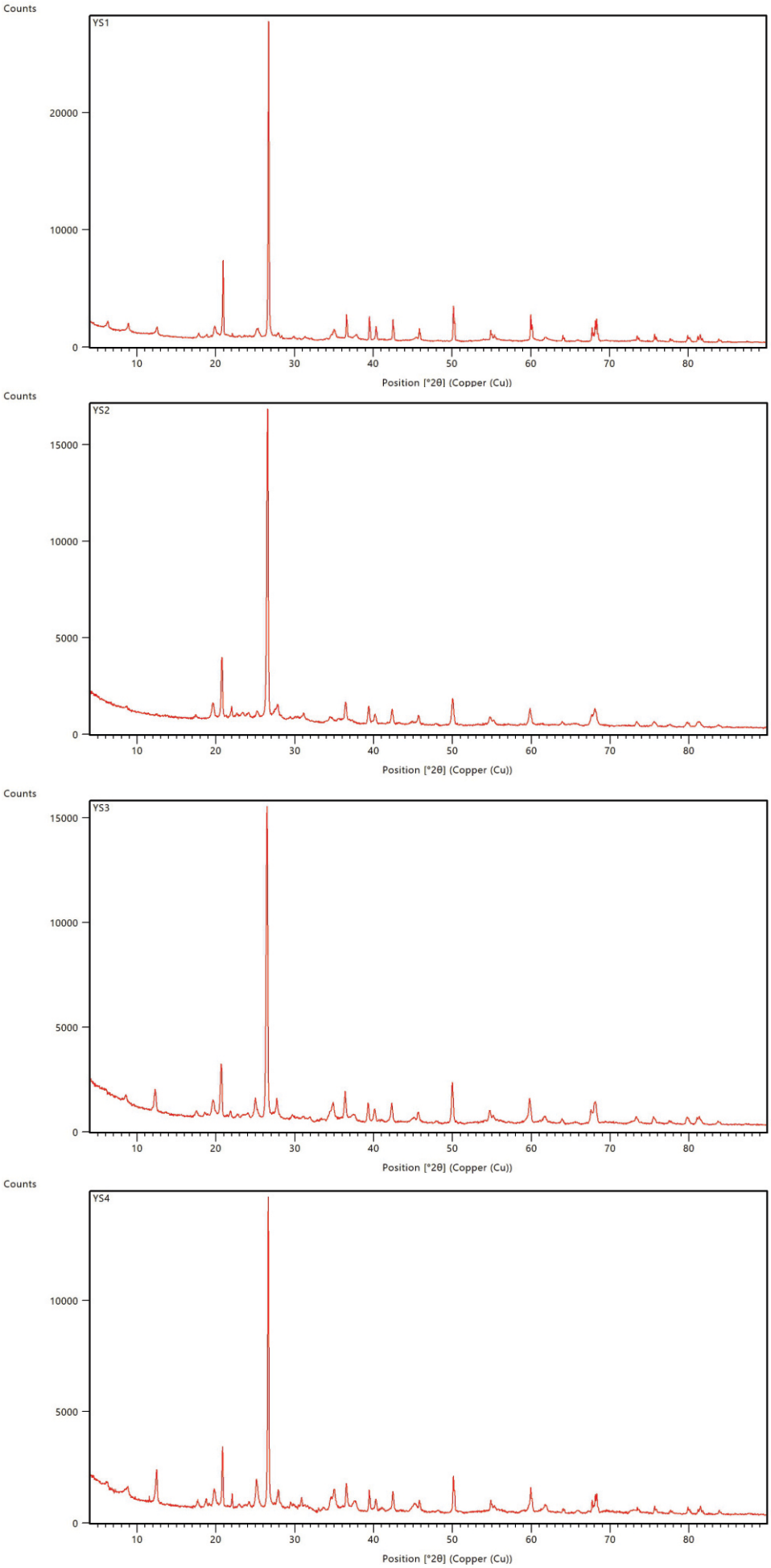

Fig 25: YS1-4, X-Ray Defraction Analysis of Yongphang Village

Fig 23 Recent vessels: (a) decorative vessel (Pongo), (b) kettle along with utilitarian and decorative pots

The dynamic nature of developments in researches concerning material culture thus provides an understanding of the variable relationships between material culture and cultural boundaries. With technological advancement of human civilisation it has become necessary for the present generation to preserve the fast diminishing traditional art of pottery making. As pointed out by S.N.Rao (1976:203) 'the pottery tradition seen here in Northeast India exhibits the survival of one of the oldest traditions of hand fashioning without decoration or painting'. Recent decades have witnessed that the traditional pottery crafts are gradually petering out under new economic conditions and giving way to the metallic ones. As such much of the knowledge about this art is fast disappearing from the memory of the people and there is a decline of artisans as well. An important goal of ceramic and pottery studies has been according to Kramer (1985:97) 'to study the rapidly disappearing traditional potters who still practice their craft in a few areas of the world. Such work is extremely important, and is still possible in some areas in Nagaland, as such though the loss of traditional crafts may be a cause of despair, but it does not signal end to understand the anthropology of traditional pottery.

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